

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An astaxanthin medium-chain fatty acid ester produced by using a lipase, ~~and a composition comprising the same.~~
2. (Currently Amended) The astaxanthin medium-chain fatty acid ester ~~and the composition comprising the same~~ according to claim 1, wherein the medium-chain fatty acid ester is a medium-chain fatty acid monoester or medium-chain fatty acid diester.
3. (Currently Amended) The astaxanthin medium-chain fatty acid ester ~~and the composition comprising the same~~ according to claim 2, wherein the medium-chain fatty acid is a fatty acid having 8 to 12 carbon atoms.
4. (Currently Amended) The astaxanthin medium-chain fatty acid ester ~~and the composition comprising the same~~ according to claim 3, wherein the medium-chain fatty acid has an even number of carbon atoms.

5. (Currently Amended) The astaxanthin medium-chain fatty acid ester ~~and the composition comprising the same~~ according to claim 4, wherein the medium-chain fatty acid has 8 carbon atoms.

6. (Canceled)

7. (Currently Amended) An astaxanthin ~~Astaxanthin~~ octanoic acid monoester, astaxanthin octanoic acid diester, ~~or a composition comprising at least either one of these compounds.~~

8. (Currently Amended) A method of producing the astaxanthin medium-chain fatty acid ester ~~and the composition comprising the same~~ according to claim ~~any one of claims 1 to 6~~, by using a lipase.

9. (Original) The method according to claim 8, wherein an esterification and/or transesterification is carried out using one or more astaxanthin materials selected from the group consisting of a free astaxanthin, an ester form astaxanthin different from a medium-chain fatty acid ester, and a mixture of ester form astaxanthins different from a medium-chain fatty acid ester; and one or more medium-chain fatty acid materials selected from the group consisting of a free medium-chain fatty acid, a medium-chain fatty acid monoglyceride, a medium-chain fatty acid diglyceride, a medium-chain fatty acid triglyceride, and a medium-chain fatty acid lower alcohol ester.

10. (Currently Amended) The method according to claim 8 ~~or 9~~, wherein the lipase is one or more of lipases selected from the group consisting of a lipase derived from yeast belonging to *Candida*, lipase derived from a microorganism belonging to ~~*Chromobacterium*~~ *Chromobacterium*, a lipase derived from a microorganism belonging to ~~*Alcaligenes*~~ *Alcaligenes*, and a lipase derived from animal pancreas.

11. (Original) The method according to claim 10, wherein the lipase is derived from yeast belonging to *Candida*.

12. (Currently Amended) The method according to ~~any one of claims~~ claim 9 ~~to 11~~, wherein the astaxanthin material is free astaxanthin and/or a mixture of different types of ester form astaxanthins, and the medium-chain fatty acid material is a medium-chain fatty acid triglyceride.

13. (Currently Amended) The method according to ~~any one of claims~~ claim 8 ~~to 12~~, wherein water is added.

14. (Original) The method according to claim 13, wherein water is added at the amount of 0.5 w/w to 20 w/w % with respect to the amount of the oil material.

15. (Currently Amended) A food composition obtained by mixing the food and the composition comprising the astaxanthin medium-chain fatty acid ester

~~according to any one of claims 1 to 6 claim 21 or the composition comprising the composition according to claim 7~~ for specific nutritive requirements, or food thereof.

16. (Currently Amended) A food additive, which comprises the composition comprising the astaxanthin medium-chain fatty acid ester according to ~~any one of claims 1 to 6 claim 21 or the composition comprising the composition according to claim 7.~~

17. (Currently Amended) A cosmetic, which comprises the composition comprising the astaxanthin medium-chain fatty acid ester according to ~~any one of claims 1 to 6 claim 21 or the composition comprising the composition according to claim 7.~~

18. (Currently Amended) An animal feed, which comprises the composition comprising the astaxanthin medium-chain fatty acid ester according to ~~any one of claims 1 to 6 claim 21 or the composition comprising the composition according to claim 7.~~

19. (Currently Amended) A method of producing the an astaxanthin octanoic acid monoester, the an astaxanthin octanoic acid diester, or the a composition comprising at least one of these compounds according to claim 7 one astaxanthin octanoic acid monoester or astaxanthin octanoic acid diester,

said method comprising the following steps (a) and (b):

- (a) a step of extracting said compound from Crustacea using a solvent or supercritical CO₂, and
- (b) a step of purifying said compound from the extract obtained by the step (a).

20. (Original) The method according to claim 19, wherein Crustacea is Euphausiacea.

21. (New) A composition comprising an astaxanthin medium-chain fatty acid ester produced by using a lipase.

22. (New) The composition according to claim 21, wherein the medium-chain fatty acid ester is a medium-chain fatty acid monoester or medium-chain fatty acid diester.

23. (New) The composition according to claim 21, wherein the medium-chain fatty acid is a fatty acid having 8 to 12 carbon atoms.

24. (New) The composition according to claim 21, wherein the medium-chain fatty acid has an even number of carbon atoms.

25. (New) The composition according to claim 21, wherein the medium-chain fatty acid has 8 carbon atoms.

26. (New) The composition according to claim 21, which comprises the astaxanthin medium-chain fatty acid ester in an amount of at least 0.1%.

27. (New) A composition comprising at least one astaxanthin octanoic acid monoester or astaxanthin octanoic acid diester.

28. (New) A method of producing the composition comprising an astaxanthin medium-chain fatty acid ester according to claim 21, by using a lipase.

29. (New) A food composition obtained by mixing the food and the composition according to claim 27 for specific nutritive requirements, or food thereof.

30. (New) A food additive, which comprises the composition according to claim 27.

31. (New) A cosmetic, which comprises the composition according to claim 27.

32. (New) An animal feed, which comprises the composition according to claim 27.